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10/561,862	12/20/2005	Hiroyuki Anzai	UNIU90.001APC	5508

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EXAMINER	
WINKLER, MELISSA A	

ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/561,862	ANZAI ET AL.	
	Examiner	Art Unit	
	MELISSA WINKLER	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-201251 to Ota et al. in view of US 5,895,793 to Kitamura et al. The citations for JP 2002-201251 have been taken from the English-language abstract and machine translation of the document made available by the Japan Patent Office.

Regarding Claims 1 and 3. Ota et al. teach a composition for preparing a rigid polyurethane foam comprising a polyol, a blowing agent, foam stabilizer, and a catalyst (Abstract: "Solution"; Detailed Description: Paragraphs 9, 11, and 12; Detailed Description: Example 1). The blowing used is a mixture of 1 – 75 percent weight HFC-245fa and 99 – 25 percent weight HFC-365mfc (Abstract: "Solution").

Ota et al. do not expressly teach the composition further comprises a compatibilizer. However, Kitamura et al. teach a blowing agent composition useful in

forming polyurethane foams comprising HFC-245fa and a stabilizing compound such as N,N-dimethylacetamide. The stabilizer is incorporated in the composition in an amount of 0.001 to 10 parts by weight per 100 parts HFC-245fa (Column 2, Lines 7 – 53). Ota et al. and Kitamura et al. are analogous art as they are from the same field of endeavor, namely compositions for preparing polyurethane foams comprising HFC-245fa as a blowing agent. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use a stabilizer in the amount taught by Kitamura et al. in the composition taught by Ota et al. The motivation would have been that use of the stabilizers taught by Kitamura et al. in conjunction with HFC-245fa prevents HFC-245fa from deactivating the catalyst when forming a polyurethane foam or causing yellowing in the final foam product (Kitamura et al.: Column 1, Lines 27 - 31 and 53 - 60; Column 1, Line 66 - Column 2, Line 6).

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-201251 to Ota et al. in view of US 5,895,793 to Kitamura et al., as applied to Claims 1 and 3 above, and further in view of US 6,319,962 to Singh et al. The citations for JP 2002-201251 have been taken from the English-language abstract and machine translation of the document made available by the Japan Patent Office.

Regarding Claims 4 and 5. Ota et al. teach the composition of Claim 3 wherein the polyol may be prepared by reacting alkylene oxide with an initiator (Detailed Description: Paragraph 9). Ota et al. are silent regarding the specific initiators which may be used. However, Singh et al. teach making polyurethane foams with polyether polyols that are prepared by the reaction of alkylene oxide with an initiator such as ethylene diamine or sorbitol (Column 6, Lines 4 – 10). Ota et al. and Singh et al. are analogous art as they are from the same field of endeavor, namely rigid polyurethane foams. At the time of invention, it would have been obvious to a person of ordinary skill in the art to prepare the polyols taught by Ota et al. using the initiators taught by Singh et al. The motivation would have been that the initiators taught by Singh et al. are suitable for the preparation of polyethers useful in preparing rigid polyurethane foams (Singh et al.: Column 4, Line 65 – Column 5, Line 2).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-201251 to Ota et al. in view of US 5,895,793 to Kitamura et al., as applied to Claims 1 and 3 above, and further in view of US 6,319,962 to Singh et al. and US 6,313,060 to Sugiyama et al. The citations for JP 2002-201251 have been taken from the English-language abstract and machine translation of the document made available by the Japan Patent Office.

Regarding Claim 6. Ota et al. teach the polyol composition of Claim 3 but do not teach it comprises an aromatic polyol obtained by addition of an alkylene oxide to a polyfunctional active hydrogen compound having an aromatic ring. However, Sugiyama et al. also teach a polyether polyol produced by addition of an alkylene oxide to a polyhydroxy compound (Column 8, Lines 12 – 20). Sugiyama et al. specifically cite bisphenol A, a polyfunctional active hydrogen compound with an aromatic ring, as a suitable polyhydroxy compound for reaction with the alkylene oxide (Column 8, Lines 26 – 35). Ota et al. and Sugiyama et al. are analogous art as they are from the same field of endeavor, namely polyurethane foams. At the time of invention, it would have been obvious to a person of ordinary skill in the art to include the aromatic polyol taught by Sugiyama et al. in the polyol composition taught by Ota et al. The motivation would have been that the polyether polyol taught by Sugiyama et al. has been found to minimize problems, such as a decrease in hardness and deterioration of compression set, associated with polyurethane foams prepared from other, conventional polyols (Sugiyama et al., Column 9, Lines 35 - 42).

Ota et al. do teach the polyol composition may comprise a polyester prepared from the reaction of a polycarboxylic acid and a polyhydric alcohol (Detailed Description: Paragraph 9). Ota et al. are silent regarding specific polycarboxylic acids that may be used. However, Singh et al. also teach preparing polyester polyols from the

reaction of a polycarboxylic acid and a polyhydric alcohol. Suitable polyester polyols include aromatic polyester polyols prepared using an aromatic polycarboxylic acid (Column 5, Lines 13 – 37). At the time of invention, it would have been obvious to a person of ordinary skill in the art to use an aromatic polycarboxylic acid when preparing the polyester polyol taught by Ota et al. The motivation would have been that aromatic polyester polyols impart advantages to polyurethane foam such as improved heat resistance in the foam product.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-201251 to Ota et al. in view of US 5,895,793 to Kitamura et al. The citations for JP 2002-201251 have been taken from the English-language abstract and machine translation of the document made available by the Japan Patent Office.

Regarding Claim 2. Ota et al. teach a method for preparing a rigid polyurethane foam comprising reacting an isocyanate with a polyol component in the presence of a blowing agent, a foam stabilizer, and a catalyst (Abstract: "Solution"; Detailed Description: Paragraphs 9 - 12; Detailed Description: Example 1). The blowing used is a mixture of 1 – 75 percent weight HFC-245fa and 99 – 25 percent weight HFC-365mfc (Abstract: "Solution").

Ota et al. do not expressly teach the composition further comprises a compatibilizer. However, Kitamura et al. teach a blowing agent composition useful in forming polyurethane foams comprising HFC-245fa and a stabilizing compound such as N,N-dimethylacetamide. The stabilizer is incorporated in the composition in an amount of 0.001 to 10 parts by weight per 100 parts HFC-245fa (Column 2, Lines 7 – 53). At the time of invention, it would have been obvious to a person of ordinary skill in the art to use a stabilizer in the amount taught by Kitamura et al. in the composition taught by Ota et al. The motivation would have been that use of the stabilizers taught by Kitamura et al. in conjunction with HFC-245fa prevents HFC-245fa from deactivating the catalyst when forming a polyurethane foam or causing yellowing in the final foam product (Kitamura et al.: Column 1, Lines 27 - 31 and 53 - 60; Column 1, Line 66 - Column 2, Line 6).

Claims 7 – 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-201251 to Ota et al. in view of US 5,895,793 to Kitamura et al. The citations for JP 2002-201251 have been taken from the English-language abstract and machine translation of the document made available by the Japan Patent Office.

Regarding Claims 7 and 9. Ota et al. teach a composition for preparing a rigid polyurethane foam comprising a polyol, a blowing agent, a foam stabilizer, and a

catalyst (Abstract: "Solution"; Detailed Description: Paragraphs 9, 11, and 12; Detailed Description: Example 1). The blowing used is a mixture of 1 – 75 percent weight HFC-245fa and 99 – 25 percent weight HFC-365mfc (Abstract: "Solution").

Ota et al. do not expressly teach the composition further comprises a compatibilizer. However, Kitamura et al. teach a blowing agent composition useful in forming polyurethane foams comprising HFC-245fa and a stabilizing compound such as N,N-dimethylacetamide. The stabilizer is incorporated in the composition in an amount of 0.001 to 10 parts by weight per 100 parts HFC-245fa (Column 2, Lines 7 – 53). At the time of invention, it would have been obvious to a person of ordinary skill in the art to use a stabilizer in the amount taught by Kitamura et al. in the composition taught by Ota et al. The motivation would have been that use of the stabilizers taught by Kitamura et al. in conjunction with HFC-245fa prevents HFC-245fa from deactivating the catalyst when forming a polyurethane foam or causing yellowing in the final foam product (Kitamura et al.: Column 1, Lines 27 - 31 and 53 - 60; Column 1, Line 66 - Column 2, Line 6).

Regarding Claim 8. Ota et al. teach the composition of Claim 7 is reacted with a polyisocyanate compound (Abstract: "Solution").

Regarding Claim 13. Ota et al. teach a method of making a rigid polyurethane foam in which the composition of Claim 7 is mixed with polyisocyanate and then

foamed to produce a rigid foam product (Detailed Description: Paragraph 12 and Example 1).

Claims 10 - 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-201251 to Ota et al. in view of US 5,895,793 to Kitamura et al., as applied to Claims 7 and 9 above, and further in view of US 6,319,962 to Singh et al. The citations for JP 2002-201251 have been taken from the English-language abstract and machine translation of the document made available by the Japan Patent Office.

Regarding Claims 10 and 12. Ota et al. teach the composition of Claim 9 wherein the polyol may be prepared by reacting alkylene oxide with an initiator (Detailed Description: Paragraph 9). Ota et al. are silent regarding the specific initiators which may be used. However, Singh et al. teach making polyurethane foams with polyether polyols prepared by the reaction of alkylene oxide with an initiator such as ethylene diamine or sorbitol (Column 6, Lines 4 – 10). At the time of invention, it would have been obvious to a person of ordinary skill in the art to prepare the polyols taught by Ota et al. using the initiators taught by Singh et al. The motivation would have been that the initiators taught by Singh et al. are suitable for the preparation of polyethers useful in preparing rigid polyurethane foams (Singh et al.: Column 4, Line 65 – Column 5, Line 2).

Regarding Claim 12. Ota et al. teach the polyol composition of Claim 9 may comprise a polyester prepared from the reaction of a polycarboxylic acid and a polyhydric alcohol (Detailed Description: Paragraph 9). Ota et al. are silent regarding specific polycarboxylic acids that may be used. However, Singh et al. also teach preparing polyester polyols from the reaction of a polycarboxylic acid and a polyhydric alcohol. Suitable polyester polyols include aromatic polyester polyols prepared using an aromatic polycarboxylic acid (Column 5, Lines 13 – 37). At the time of invention, it would have been obvious to a person of ordinary skill in the art to use an aromatic polycarboxylic acid when preparing the polyester polyol taught by Ota et al. The motivation would have been that aromatic polyester polyols imparts advantages to polyurethane foam such as improved heat resistance in the foam product.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-201251 to Ota et al. in view of US 5,895,793 to Kitamura et al., as applied to Claims 7 and 13 above, and further in view of US 6,319,962 to US 5,164,419 to Bartlett et al. The citations for JP 2002-201251 have been taken from the English-language abstract and machine translation of the document made available by the Japan Patent Office.

Regarding Claim 14. Ota et al. teach the method of Claim 13 but are silent regarding the NCO:OH ratio. However, Bartlett et al. also teach a method of making a

rigid polyurethane foam in which the isocyanate index/NCO:OH ratio is preferably in the range of about 1.0 to about 4.0 (Column 5, Lines 9 – 14). Ota et al. and Bartlett et al. are analogous art as they are from the same field of endeavor, namely rigid polyurethane foams. At the time of invention, it would have been obvious to a person of ordinary skill in the art to react the polyol and isocyanate components taught by Ota et al. at the isocyanate index taught by Bartlett et al. The motivation would have been that the isocyanate index taught by Bartlett et al. provides advantages such as stiffness and minimal shrinkage in the final foam product.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-201251 to Ota et al. in view of US 5,895,793 to Kitamura et al., as applied to Claims 7 and 13 above, and further in view of US 5,786,400 to Brock et al. The citations for JP 2002-201251 have been taken from the English-language abstract and machine translation of the document made available by the Japan Patent Office.

Regarding Claim 15. Ota et al. teach the method of Claim 13 but do not expressly teach the temperature at which the isocyanate and polyol components are reacted. However, Brock et al. teach a method of making a polyurethane foam wherein the isocyanate and polyol mixture are blended at a temperature of 20°C (Column 6, Lines 48 – 53). Ota et al. and Brock et al. are analogous art as they are from the same

field of endeavor, namely rigid polyurethane foams. At the time of invention, it would have been obvious to a person of ordinary skill in the art to react the isocyanate and polyol components in the invention of Ota et al. at the temperature taught by Brock et al. The motivation would have been that the reaction temperature taught by Brock et al. provides advantages such as avoiding the decomposition of the reactants and providing a reaction rate that is practicable in industrial applications.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA WINKLER whose telephone number is (571)270-3305. The examiner can normally be reached on Monday - Friday 7:30AM - 5PM E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/ MW
Supervisory Patent Examiner, Art Unit 1796 November 18, 2008